IN THE CLAIMS

1-40. (Cancelled)

41. (New) An attenuated *Actinobacillus pleuropneumoniae* bacterium.

42. (New) The bacterium of claim 41, having a mutation in a gene required for bacterial virulence.

43. (New) The bacterium of claim 41, having a mutation in a gene which comprises a nucleotide sequence selected from the group consisting of SEQ ID NO.:1-56.

44. (New) The bacterium of claim 41, having a plurality of mutations, occurring within a single gene or within different genes.

45. (New) A composition, comprising the bacterium of claim 41.

46. (New) The composition of claim 45, comprising a plurality of different attenuated *A. pleuropneumoniae* bacteria selected from the group consisting of bacteria having different mutations in the same virulence gene, bacteria having similar or different mutations in two or more different genes, and mixtures thereof.

47. (New) A method of treating an organism, comprising:

administering to the organism the bacterium of claim 41;

where the treatment is selected from the group consisting of preventing an infection with *A. pleuropneumoniae*, alleviating an infection with *A. pleuropneumoniae*, preventing symptoms associated with *A. pleuropneumoniae* infection, and alleviating symptoms associated with *A. pleuropneumoniae* infection.

48. (New) An attenuated bacterium having a mutation in a gene comprising a nucleotide sequence which is capable of hybridising to any one of the nucleotide sequences defined by SEQ ID NO:1-56, under conditions of moderate to high stringency.

49. (New) A method of treating an organism, comprising:

administering to the organism the attenuated bacterium of claim 48;

where the treatment is selected from the group consisting of preventing an infection with a wild-type bacterium (or a different strain or serotype thereof), alleviating an infection with a wild-type bacterium (or a different strain or serotype thereof), preventing symptoms associated with an infection with a wild-type bacterium (or a different strain or serotype thereof), and alleviating symptoms associated with an infection with a wild-type bacterium (or a different strain or serotype thereof).

50. (New) An isolated polynucleotide, selected from the group consisting of:

a polynucleotide encoding a gene product which is naturally involved in (e.g. required for) the virulence of *A. pleuropneumoniae*;

a polynucleotide encoding a gene product which is not naturally found in *A. pleuropneumoniae*, but whose expression therein is capable of modulating (e.g. of decreasing) the virulence of that bacterium;

a polynucleotide which is not naturally found in *A. pleuropneumoniae* but which is capable of modulating the virulence of that bacterium by its direct interaction with *A. pleuropneumoniae* virulence genes or gene products; and

a polynucleotide comprising (a) a nucleotide sequence selected from the group consisting of SEQ ID NO.: 1-56; (b) a nucleotide sequence encoding the polypeptide which is encoded by the nucleotide sequence recited in (a); (c) a nucleotide sequence which hybridizes to the nucleotide sequence of (a) and/or (b), or to its complement, under conditions of moderate to high stringency; or (d) a fragment of any one of the nucleotide sequences of (a)-(c), which fragment retains an immunological property and/or a biological activity of the recited nucleotide sequence of (a)-(c).

51. (New) A vector comprising the polynucleotide of claim 50.

52. (New) A host cell containing the polynucleotide of claim 50.

53. (New) An isolated *A. pleuropneumoniae* virulence polypeptide.

54. (New) A virulence polypeptide encoded by the polynucleotide of claim 50.

55. (New) A method of producing a virulence polypeptide, comprising:

(i) culturing the host cell of claim 52 under conditions that permit the expression of the polypeptide; and

(ii) recovering and optionally isolating the expressed polypeptide from the host cell, or from its surrounding medium.

56. (New) A composition comprising an isolated *A. pleuropneumoniae* virulence polypeptide or the polypeptide of claim 54.

57. (New) An antibody which specifically recognizes the polynucleotide of claim 50, a polypeptide encoded by the polynucleotide, or an isolated *A. pleuropneumoniae* polypeptide.

58. (New) A method for identifying an anti-bacterial agent which is capable of modulating the function of an *A. pleuropneumoniae* virulence gene, or of a homologous gene in a related species, comprising:

screening potential agents for their ability to interfere with the expression and/or biological activity in a host bacterium of the gene products encoded by the nucleotide sequences set forth in any one of SEQ ID NO:.1-56.

59. (New) An anti-bacterial agent identified by the method of claim 58.

60. (New) A method of treating an animal suffering from a *Pasteurellaceae* (e.g. an *A. pleuropneumoniae*) infection, comprising:

administering the anti-bacterial agent of claim 59.